

GREEN

R E P O R T

GREEN SEALS' S
Choose

PAPER TOWELS

Every time you use a paper towel, you are using an item that is gone forever, unable to be recycled. Used in over 90% of American households, consumers discard over 3,000 tons of paper towels every day. Most of us never think about where this wastepaper will end up or the environmental concerns associated with its creation and ultimate disposal.

American consumers discard over 3,000 tons of paper towels every day.

With every sheet of paper towel used, there is the potential to save paper (and ultimately trees), water and energy and to decrease or eliminate the release of certain toxins. This *Choose Green Report* discusses the environmental concerns associated with these towel products including recycled content, bleaching, deinking and packaging. In the report's table we compare brands of paper towel products, providing information on recycled content, the bleaching process, packaging and other important information.



Recycled Products

Paper towels (along with napkins) account for approximately 50% of all tissue production. Consumption totals 2.5 million tons or more annually. These types of papers cannot be recycled after they are used. Therefore, they present the best final use of fiber that has already been used in other products. Virgin materials are best left for

products that can be recycled. Many towel products do incorporate wastepaper into their product line, albeit they are not often labelled as a recycled content product. Although the total recycled content is much higher than other paper products (average of 40-50%), the ability to incorporate a higher percentage of

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Recycled Products
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recycled material has been accomplished by several manufacturers and is preferred from an environmental standpoint. If, for example, all paper towels utilized 100% recycled materials, approximately 1 million tons of used paper would be kept from being dumped into our waste stream. The use of recycled paper products can have other environmental benefits as well.

For every ton of paper that is recycled, 3.3 cubic yards of landfill space are saved. It takes 3.5 tons of wood to produce one ton of tissue paper. Replacing that wood with

Paper towels cannot be recycled after they are used. Therefore, they present the best final use of fiber that has already been used in other products.

wastepaper would therefore save trees. Manufacturing paper products from virgin fiber (versus recycled) consumes twice as much energy and more water, wood, and other natural resources. There is often a higher amount of discharge of most air and water pollutants, too. For every ton of 100% recycled paper manufactured, approximately 4,100 kwh of energy and 7000 gallons of water would be saved. Sixty pounds of air pollutants would be kept from our atmosphere as well.

It should be noted that total recycled content refers to both preconsumer and postconsumer materials.

■ **Postconsumer** refers to end products that have been generated by the consumer. These materials have been separated from the waste stream instead of being landfilled or incinerated.

■ **Preconsumer** refers to materials that are captured by the manufacturers prior to consumer use. They include pulp substitutes and mill scraps.

Although both are important, Green Seal recommends choosing products with the highest postconsumer content. Increasing the amount of postconsumer fiber in paper towels offers the greatest opportunity to divert wastepaper from the waste stream. This will encourage companies to increase the amount of recycled materials in their products and will benefit recycling programs as well. Therefore, Green Seal recommends choosing paper towels with a

minimum of 40% **postconsumer** paper material.

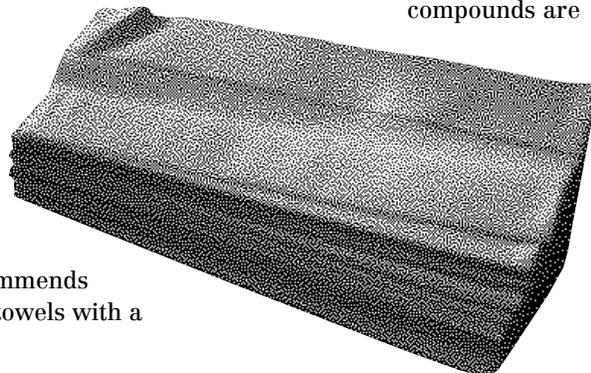
Bleaching

Often manufacturers will bleach the paper fibers that will be used in the paper towels. This process is done to remove the remaining lignin (the “glue” that holds the wood fibers together) in the pulp and to increase the brightness of a product, whitening the unbleached, brownish pulp as well. Bleaching has been traditionally carried out with elemental chlorine. Using elemental chlorine results in the release of chlorinated compounds, especially dioxins. Chlorinated organic compounds, including

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dioxins and furans, are confirmed carcinogens and mutagens and have been known to affect the immune and reproductive systems. They are harmful to humans, aquatic life and wildlife. They are also known to be bioaccumulative.

This refers to the buildup of higher and higher concentrations of potentially toxic chemicals in organisms. The compounds are



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Green Seal recommends choosing paper products that are unbleached whenever possible. The next choice would be:

■ **Process Chlorine Free (PCF)** paper products. This is a term reserved for recycled content products. All recycled fibers must not be bleached with chlorine or its derivatives. The recycled paper may have been bleached with chlorine or its derivatives in its original (pre-recycled) processing. If the product contains any virgin component, these fibers must also be totally chlorine free.

■ **Elemental Chlorine Free (ECF)** products are the next choice. These are products that have been bleached with a chlorine derivative. Although they are not nearly as preferable as PCF or unbleached products, they are preferred over chlorine bleached products because fewer chlorinated organic compounds are released.

■ **Totally Chlorine Free (TCF)** is also a term you may come across. This refers to a product made totally from virgin components (and therefore not recommended for a towel product). The product is bleached with an alternative to chlorine or its derivatives. This would include hydrogen peroxide or ozone. With TCF bleaching no chlorinated organic compounds are released.

ingested or absorbed but cannot be broken down. Organisms at the top of food chains may therefore accumulate as much as a millionfold higher concentrations than those present in the environment. It has been reported that over 1 trillion gallons of wastewater contaminated with chlorinated organic compounds are released by the paper and pulp industry every year.

Derivatives of chlorine such as chlorine dioxide are also being used to accomplish the bleaching process. Although these derivatives emit fewer dioxins, furans and other chlorinated organic compounds, these harmful compounds are still released.

Alternatives to chlorine and its derivatives for bleaching include oxygen, hydrogen peroxide, enzyme bleaching and ozone. Use

of these compounds does not result in the release of dioxins. Keep in mind as well, that paper towels and other tissue products do not need to be bleached at all! Brown paper towels can work just as well as those that are bleached.

Deinking

The process of deinking involves the removal of coatings, fillers, pigments, inks and dyes from the reusable cellulose fiber of paper before it is used in the manufacturing of recycled content paper towels and tissue products. Deinking allows the use of the most substantial portion of the paper (the cellulose fiber) to be extracted for recycling.

One major concern of deinking lies with the residual sludge that is created after the deinking process is complete. This sludge can

contain toxic heavy metals such as cadmium, chromium, mercury, arsenic and many others. These metals are contained in the inks and dyes used in printing. The sludge may also contain contaminants from the original paper bleaching process such as chlorinated organic compounds. The deinked pulp as well is often re-bleached with chlorinated compounds.

This sludge is disposed of in several ways. It can be placed in a special landfill which has been designed with leachate and groundwater monitoring systems. The sludge can also be incinerated, "landfarmed" (distributed over farmland soils) or reused (in the manufacturing of concrete blocks for example). None of these options are without possible impact, but creating products with a recycled content are preferable to those made with virgin materials. This is because the impacts of deinking tend to be less severe than those associated with the use of virgin pulp. The use of deinking mills diverts a large amount of refuse from entering our municipal waste stream. Although sludge is produced, a deinking mill produces 21-31% less effluent per unit of production as compared to a virgin paper mill. Deinked sludge also contains significantly less chlorinated organic compounds than the

If deinked stock is used, it is imperative that the toxic materials used in inks and dyes be eliminated and that chlorine not be used for paper bleaching.

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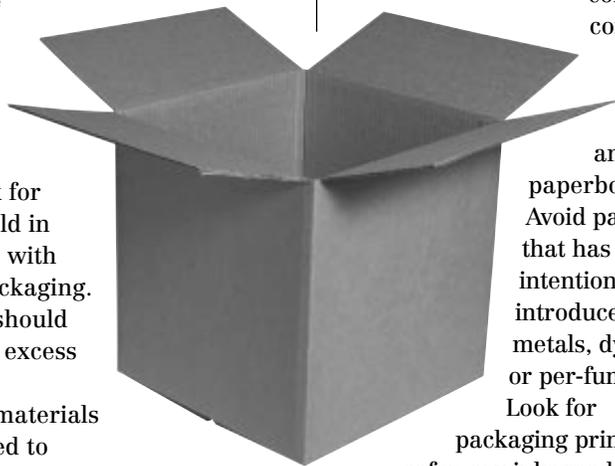
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original bleaching of the wastepaper stock. If the deinked stock is re-bleached, less bleach is required. As little as 10% of the bleaching compounds used in virgin paper production is used to bleach the deinked stock.

If deinked stock is used, it is imperative that the toxic materials used in inks and dyes be eliminated and that chlorine not be used for paper bleaching. By decreasing and eliminating these harmful chemicals the deinking process can become a safer process and the environment will reap the benefits.

A Word On Packaging And Source Reduction

When purchasing your tissue products you should always consider the impacts of the packaging. Remember, a large amount of packaging ends up in the solid waste stream. We must also be concerned with the way the packaging is manufactured. Packaging can contain toxic metals and chemicals and can incorporate non-renewable resources, as well. Therefore, always look for products sold in bulk and/or with minimal packaging. Packaging should not contain excess and useless packaging materials that are used to make the product appear "bulked-up". Check to make sure



products do not contain surplus packaging either. Products that are

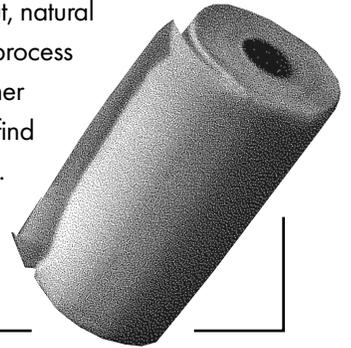
Look for products sold in bulk and/or with minimal packaging.

Check for packaging that is recycled and is recyclable.

breakable, spillable, or toxic and harmful may require extra packaging, but paper towels do not. Look for packaging that is recycled and is recyclable. For example, look for a recycled content in corrugated cardboard boxes and paperboard. Avoid packaging that has intentionally introduced toxic metals, dyes, inks, or per-fumes. Look for packaging printed with safer, soy inks made from renewable resources.

BE ON THE LOOKOUT . . .

For "private label", recycled paper towel products. Most major chains that carry paper towels on a regular basis have a "private label". Read the labels carefully to find paper towels with a minimum of 40% postconsumer recycled content. Seek out, natural (brown) unbleached towels too. The bleaching process may not be indicated on the label, but a consumer information number is often provided for you to find the answers to such questions. And best of all . . . these products are often cheaper than major brand competitors!



Also when choosing a paper towel product, use a hard roll towel whenever possible. These are towels that are wrapped around a central core and allow the user to take only as much as is needed, as opposed to the pre-set amount of pre-folded towels. If using a hard roll in a bathroom dispenser, reduce the amount of paper towel that is dispensed to the user. Hard roll towels and some jumbo products can also use less packaging per weight than folded towels. Using less product works out to mean using less fiber, which means you reduce the overall impact of paper towels. Less fiber means fewer air, water and solid pollutants are created and fewer non-renewable fossil fuels are depleted.

Finally, when buying hard roll towels look for those that offer more cubic feet than other standard rolls. Be sure to read labels carefully. Some manufacturers may "puff up" their products with air so that they look the same in diameter, but offer fewer sheets per roll. More sheets per roll helps to reduce both packaging waste and the amount of fuel used for transport.

To Wipe Or Not To Wipe? With A Cloth

Most would assume that using a reusable, washable cloth towel would be the easy solution to the paper towel dilemma. Yet this is not always the case. Cloth towels themselves do not come without their own environmental concerns. One must consider the energy, water, fertilizer, insecticide and herbicide costs associated with the growing of the cotton and the manufacturing of the cloth, as well as, the potential for soil erosion. Energy and water concerns and pollutants are also associated with the washing and drying of the cloth. In certain instances, cloth towels could also spread bacteria or disease.

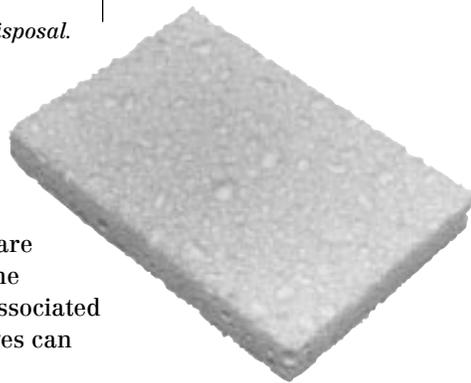
Sponges are another replacement for paper towels. They have

the advantage of being used several times and not requiring the use of a washer or dryer. They also require only 20% of the production required to manufacture recycled paper towels. Sponges however are often made from the cellulose by-products of the virgin paper making process. This means they are subject to many of the same environmental concerns associated with paper making. Sponges can

Cloth towels and sponges have their own environmental advantages and disadvantages . . . how they are manufactured or harvested, sanitization, and disposal.

also be made from non-renewable petroleum products. If you choose a natural sponge, there is the potential for damage to underwater reefs during collection.

So what do you do? Green Seal recommends that if the cloth or sponge is to be used only once (as in restaurants and certain institutional settings) it is probably best to use a paper towel instead.



GREEN SEAL RECOMMENDS CHOOSING PAPER TOWELS THAT . . .

- Contain the maximum amount of postconsumer fiber.** The minimum amount you should choose is 40%.
- Are unbleached whenever possible.** If you insist on a white paper towel, choose those that are Process Chlorine Free (PCF) first. If PCF towels are not available, choose a product that is Elemental Chlorine Free (ECF).
- Are packaged responsibly.** Look for minimal packaging and/or products sold in bulk. Choose products that are packaged in materials that are recycled and recyclable, and are free of toxic metals, fragrances, dyes and inks made from non-renewable resources.
- Are hard roll and are considered jumbo products.**

Recommended Paper Towels

BRAND/MANUFACTURER	RECYCLED CONTENT	BLEACHING PROCESS	PACKAGING	COMMENTS
 HARMONY/ SEVENTH-GENERATION 800-456-1191 (wholesale) 800-456-1177 (retail catalogue)	100% recycled 100% postconsumer	Natural- unbleached	<ul style="list-style-type: none"> • Minimal, recyclable • More sheets per roll than other brands • Compress 2-3 regular rolls into one without using more space 	<ul style="list-style-type: none"> • HRT • Towels are free from intentionally introduced dyes, inks & fragrances • Available in small & large numbers • Wholesale, retail catalogue, general retail
 SECOND NATURE PLUS/ Wisconsin Tissue 800-451-3595	100% recycled 100% postconsumer	Natural- unbleached	<ul style="list-style-type: none"> • Product #1975 offers 2X the amount of full-sized sheets as compared to their standard roll 	<ul style="list-style-type: none"> • HRT, CFT, MFT • Available in small & large numbers • Distributors
 OVATION/Encore Paper Company, Inc. 800-ENCORE-5	100% recycled Brown towels: 80% postconsumer, 20% preconsumer	Brown- unbleached	<ul style="list-style-type: none"> • Paper wrap, poly film, chipboard sleeves & corrugated cartons contain recycled material & are recyclable • Inks used on packaging do not contain heavy metals or fragrances 	<ul style="list-style-type: none"> • HRT, CFT, MFT • Distributors
 ENVISION: Preference and Acclaim/Fort James Corp. 203-854-2793	100% recycled Preference-65-95% postconsumer, 5-35% preconsumer Acclaim-90-95% postconsumer, 5-10% preconsumer	Natural- unbleached	<ul style="list-style-type: none"> • Minimal • Corrugated boxes are recycled & recyclable • Film is recycled within facility for energy 	<ul style="list-style-type: none"> • HRT, CFT, MFT • Towels are free from intentionally introduced dyes & fragrances • Available in bulk • Wholesale & brokers
 RENAISSANCE/ Fort James Corp. 203-854-2793	40% postconsumer	Brown- unbleached	<ul style="list-style-type: none"> • Minimal • Corrugated boxes are recycled and recyclable • Film is recycled within facility for energy 	<ul style="list-style-type: none"> • HRT, CFT, MFT, SFT
 HARMONY/ SEVENTH-GENERATION 800-456-1191 (wholesale) 800-456-1177 (retail catalogue)	100% recycled 100% postconsumer	White-PCF	<ul style="list-style-type: none"> • Minimal, recyclable • More sheets per roll than other brands • Compress 2-3 regular rolls into one without using more space 	<ul style="list-style-type: none"> • HRT • Towels are free from intentionally introduced dyes, inks & fragrances • Available in small & large numbers • Wholesale, retail catalogue, general retail

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Recommended Paper Towels

BRAND/MANUFACTURER	RECYCLED CONTENT	BLEACHING PROCESS	PACKAGING	COMMENTS
★ MARCAL ^{1,2,3} SUNRISE ^{1,2} and private label kitchen roll towels 1/ Marcal Paper Mills, Inc. 201-703-6373 (AFHP) 201-703-6393 (AHP) (trade buyers) 800-548-7337 (general consumer)	100% recycled Min. 60% postconsumer	PCF	<ul style="list-style-type: none"> • Minimal • Bulk (multi roll packs) & maxi-roll products available • 15 roll towel products use a polycase™ system which saves space, weight, & fuel. The film is recycled by chainstore operators. 	<ul style="list-style-type: none"> • HRT • Distributors, U.S. Military's commissary system and some retail chains • Marcal is recycling with approximately 1000 communities which market their postconsumer paper fiber to Marcal.
SCOTT, SURPASS, KLEENEX SCOTTFOLD, KLEENEX and TRADITION/Kimberly-Clark: 800-241-2739 (industrial) 800-553-3639 (consumer products)	Min. 40% postconsumer	ECF or PCF	<ul style="list-style-type: none"> • Folding cartons & chipboard sleeves are 100% recycled. • KDF's are 33% recycled. 	<ul style="list-style-type: none"> • HRT, CFT, MFT • KLEENEX SCOTTFOLD is a folded towel • Distributors
ENVISION: Preference Ultra, Preference and Acclaim/ Fort James Corp. 203-854-2793	100% recycled Preference Ultra- 65% postconsumer, 35% preconsumer Preference- 65-95% postconsumer, 5-35% preconsumer Acclaim- 90-95% postconsumer, 5-10% preconsumer	White-ECF	<ul style="list-style-type: none"> • Minimal • Corrugated boxes are recycled & recyclable • Film is incinerated within facility for energy 	<ul style="list-style-type: none"> • HRT, CFT, MFT • Towels are free from dyes & fragrances • Available in bulk • Wholesale & brokers
PUTNEY PAPER TOWELS/ Putney Paper Co. 800-343-4026	100% recycled 40% postconsumer 60% preconsumer	ECF	<ul style="list-style-type: none"> • Packaging is 100% recycled: 40% postconsumer, 60% pre-consumer 	<ul style="list-style-type: none"> • HRT, CFT, MFT, SFT • Wholesale

NOTES:

✓ = A Green Buy. These are towels that meet or exceed the minimum levels of postconsumer recycled content recommended by Green Seal **and** are unbleached.

★ = A Honorable Mention. These are towels that meet or exceed the minimum levels of postconsumer recycled content recommended by Green Seal and are PCF.

HRT = Hard Roll Towel

CFT = C-Fold Towel

MFT = Multi-Fold Towel

SFT = Single-Fold Towel

PCF = Process Chlorine Free. Towels are NOT bleached with elemental chlorine or its derivatives.

ECF = Elemental Chlorine Free. Towels are bleached with a derivative of chlorine.

KDF = Knock Down Flat. This is the outer shipping box.

¹ Information on these Marcal products is based upon the assumption that the products were produced at Marcal's Elmwood facility.

² This is considered an "Away-From-Home Product" (AFHP)

³ This is considered an "At Home Product". (AHP)



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- **Do's and Don'ts for Cleaners**
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